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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TRAN, THANH Y

ART UNIT

PAPER NUMBER

2841

DATE MAILED: 02/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/879,783

Applicant(s)

CALDWELL, BARRY

Examiner

Thanh Y. Tran

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 12-16, 23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ameen et al. (U.S. 5,591,034).

As to claim 1, Ameen et al. discloses an adhesive (see Fig. 1, element 10, col. 5, lines 5-17) suitable to provide a bond between components (12 and 14), an adhesive comprising an adhering material suitable for holding a first surface (20) and a second surface (18) in contact (see Fig. 1, elements 10, 18 & 20; col. 5, lines 5-17); and a plurality of items disposed in the adhering material (see Fig. 1, the items or particles within the interface 10; also see col. 5, lines 5-65), the plurality of items having electromagnetic capability (EMC) shielding characteristics (see Fig. 1, the items or conductive particles within the interface 10; also see col. 5, lines 5-65; col. 9, lines 9-18 & lines 52-57).

As to claim 2, Ameen et al. discloses an adhesive (see Fig. 1, element 10, col. 5, lines 5-17) wherein an item of the plurality of items includes at least one of ceramic ferromagnetic material and magnetic shielding alloy (see Fig. 1, elements 10; col. 5, lines 5-65; col. 9, lines 9-19 & lines 45-57).

As to claim 3, Ameen et al. discloses an adhesive (see Fig. 1, element 10, col. 5, lines 5-17) wherein the ceramic ferromagnetic material includes ferrite (<sup>“non-conductive material”</sup> “nonconductive material”) (see col. 5, lines 59-65).

As to claim 4, Ameen et al. discloses an adhesive (see Fig. 1, element 10, col. 5, lines 5-17) wherein a quantity of the plurality of items disposed in the adhering material (10) is sufficient to provide EMC shielding between the first surface (20) and the second surface (18) (see Fig. 1, col. 5, lines 5-65; col. 9, lines 9-17 & lines 45-57).

As to claim 5, Ameen et al. discloses an adhesive (see Fig. 1, element 10, col. 5, lines 5-17) wherein the first surface (20) is included on an integrated circuit (14) and the second surface (18) is included on a heat sink (12).

As to claims 12 and 23, Ameen et al. further discloses an electrical system (Fig. 1) comprising a first electrical component (14) suitable for providing a function, the first electrical component (14) including a first surface (20); a second component (12) suitable for providing a function, the second component (12) including a second surface (18); a carrier material (10) disposed between the first electrical component (14) and the second component (12). Therefore, claims 12 and 23 are rejected for the same reasons as discussed above in claim 1.

Claims 13-16 recite limitations similar to claims <sup>2-5</sup>25. Ameen et al. further discloses an electrical system (Fig. 1) wherein a first electrical component (14) is an integrated and the second component (12) is a heat sink (see Fig. 1, element 12 and 14; col. 5, lines 5-17).

As to claim 25, Ameen et al. discloses an electrical system (Fig. 1) wherein the carrier material (10) is thermally conductive (see col. 5, lines 5-65).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-11, 17-19, 20-22 and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Ameen et al. (U.S. 5,591,034).

As to claim 6, Ameen et al. does not specific disclose an adhesive wherein items of the plurality of items (particles) are shaped to include at least one of a disk, sliver, hexagonal, triangular, parallelogram, oval, diamond, polyhedral and polymorphic. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide items (particles) by any specific shapes that best fit any particular design, since a mere change in size of an item would have been an obvious matter of design choice. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

As to claims 7-11, the limitations of a specific item which has a longest dimension is at least one of equal to and less than one-half of a distance between the first surface and the second surface would have been obvious to one of ordinary skill in the art at the time the invention was made because the skilled artisan will know what dimension the item should be to match with the distance between the first surface and the second surface of the adhesive. The same reasoning applies to limitations in claims 8, 9, 10, and 11.

Claims 17-19 recite limitations similar to claims <sup>6-8</sup>68. Therefore, they are rejected for the same reasons as discussed above in claims 6-8.

Claims 21-22 recite limitations similar to claims 10-11. Therefore, they are rejected for the same reasons as discussed above in claims 7-11. The same reasoning applies to limitations in claim 20.

As to claim 24, Ameen et al. is silent disclosing the plurality of items are formed having a length between 3 microns and a millimeter. However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use between 3 microns and a millimeter length rule because it has been held by the courts that where the general conditions of the claims are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (In re Swain et al., 70 USPQ 412).

### *Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lian et al. (U.S. 6,327,145), Gonsalves et al. (U.S. 6,212,074), Bernier et al. (U.S. 5,847,929), Dawson et al. (U.S. 5,621,615), Witchger (U.S. 6,097,602), Johnson et al. (U.S. 5,969,947), Bernier et al. (U.S. 6,069,023), Clark, Jr. et al. (U.S. 5,785,913), and Collins et al. (U.S. 5,615,086) disclose attaching heat sinks directly to electronic components and substrates.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (703) 305-4757. The examiner can normally be reached on Monday through Thursday and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (703) 308-3121. The fax phone number for the organization where this application or proceeding is assigned is (703) 305431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308956.

TYT

A handwritten signature in black ink, appearing to read 'David Martin', with a stylized flourish at the end.

**David Martin**  
**Primary Examiner**